

SWAZILAND

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ANNUAL MEDICAL & SANITARY  
REPORT  
FOR THE YEAR 1949





Name	Office or Rank	Date of		
		Appointment	Resignation	Death
Miss E.M. Skuthorp.	Nursing Sister		30. 4. 49	22.6.49
Miss J.E. Trollip	Nursing Sister		31. 10. 49	
Miss J. Harding	Nursing Sister	5. 1. 49		
Miss M.E. Requilet	Nursing Sister		3. 1. 49	
Miss C.R. McSeveney.	Lady Clerk & Typist		30. 4. 49	
Miss D.E. Boast.	Nursing Sister			
Miss H.F. Hewitt.	Nursing Sister	15. 3. 49	30. 6. 49	
Miss L. O'Connor Black	Laboratory Assistant.		31. 8. 49	
Dr. C. Runciman.	Medical Officer.	1. 12. 49		
Miss D.L. Glen Leary.	Lady Clerk & Typist.	1. 5. 49		
Miss E.H. Overton.	Nursing Sister.	14. 7. 49		
Miss M.S. Burdett.	Nursing Sister.	1. 5. 49		
Miss J. Bredell.	Laboratory Assistant	1. 12. 49		
Major W.E.L. Eason.	Dispenser, Storekeeper, Radiographer.		26. 12. 49	



RELIEFS.

Name	Office or Rank	From	To
Dr. D. Drew, O. B. E.	Medical Officer.	1. 1. 49	23. 1. 49
Miss D. L. Glen Leary.	Typist.	12. 3. 49	26. 3. 49
		28. 1. 49	29. 1. 49
		1. 2. 49	2. 2. 49
		3. 2. 49	9. 2. 49
		16. 2. 49	26. 2. 49
Miss E. Hunter.	Nursing Sister.	1. 6. 49	30. 6. 49

Distribution of European Medical and Nursing Staff  
on 31st December, 1949.

Name	Rank	Station
Dr. J. C. Callanan, O. B. E.	Director of Medical Services	Mbabane.
Dr. H. Flack.	Medical Officer.	do.
Dr. L. E. D. F. Joubert.	Medical Officer.	do.
Mrs. G. M. Sivewright.	Nursing Sister.	do.
Miss M. S. Burdett.	Nursing Sister.	do.
Mrs. H. Perkins.	Nursing Sister.	Mankaiana.
Dr. A. E. Batchelor.	Medical Officer.	Hlatikulu.
Dr. O. Arnheim.	Medical Officer.	do.
Mr. J. L. van der Vyver.	Hospital Assistant, Dispenser.	do.
Miss E. H. Overton.	Nursing Sister.	do.
Miss A. D. Killen.	Nursing Sister.	do.
Miss J. Harding.	Nursing Sister.	do.
Miss. S. McCorkindale, M. B. E.	Nursing Sister.	Goedgegun.
Miss A. Martin.	Nursing Sister.	Hluti.
Dr. O. Mastbaum.	Malaria Medical Officer.	Bremersdorp.
Miss J. Bredell.	Laboratory Assistant.	do.
Mr. A. J. Sowden.	Superintendent Mbuluzi Leper Hospital.	Mbuluzi.

(b) LEGISLATION AFFECTING THE MEDICAL DEPARTMENT ENACTED

DURING THE YEAR.

- (i) Proclamation No. 30. Swaziland Public Health  
(Amendment) Proclamation.
- (ii) High Commissioner's Notice No. 174. Additional  
Public Health Regulations.





(c) FINANCIAL.Revenue 1949/50.

Hospital, Health Centre and other fees.	£1,573. 6. 9.
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Expenditure 1949/50.

Personal Emoluments.	£20,683. 14. 0.
Travelling Expenses.	£ 796. 1. 9.
Allowances and Fees.	£ 175. 19. 9.
Maintenance of Patients and purchase of Medicines.	£10,384. 18. 2.
Laboratory Services - South African Institute of Medical Research.	£ 600. 0. 0.
Maintenance of Lepers.	£ 411. 13. 0.
Maintenance of Lunatics.	£ 1,507. 2. 6.
Specialist treatment in Union Hospitals for Indigents.	--
Hospital equipment.	£ 2,133. 9. 9.
Uniforms for African Staff.	£ 407. 0. 5.
Vaccination.	£ 180. 9. 2.
Training of African Nurses.	£ 200. 0. 0.
Havelock Mine - drug replacements.	£ --
Subsidies for Medical Services.	£ --
Church of the Nazarene Mission of South Africa £.... ; Red Cross £.... ; Roman Catholic Mission £....	£ 3,305. 7. 1.
Anti-malaria measures.	£ 480. 1. 6.
Leper Survey.	£ --
Purchase of ambulance.	£ 590. 11. 2.
H. C. T. Nursing Council, Travelling and other expenses.	£ 55. 12. 9.
Upkeep of Hospital grounds.	£ 78. 12. 10.
Upkeep of X-Ray Plant.	£ 30. 0. 0.

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£42,024. 13. 10.

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Anti-Malaria and Public Health Campaign Scheme No. D. 1084.	£11,523. 2. 4.
Leper Hospital Scheme No. D. 1017	£ 2,136. 9. 4.
Extensions to Mbabane and Hlatikulu Hospitals and African Nurses Home, Bremersdorp, Scheme No. D. 1085	£ 7,910. 18. 5.

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Total Expenditure on Medical and Sanitary Services.	£63,595. 3. 11.
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Total Revenue of the Territory.	£661,264. 13. 6.
The relationship of Medical Expenditure (excluding Colonial Development and Welfare Fund Expenditure) to the total Revenue of the Territory.	.....6.35%.....

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## II. PUBLIC HEALTH.

### I. General Diseases.

The general disease pattern was similar to that described in previous years.

### II. Communicable Diseases.

(i) Malaria. The incidence of malaria during 1949 assessed on the basis of cases treated at Hospitals, was some 44% less than in the previous year, and 61% of the cases occurred in the Manzini and Stegi Districts. The low incidence of the disease was partly attributable to sub-normal rainfall which reduced the facilities for the breeding of the *A. gambiae*, and partly to the fact that control measures were in operation throughout large areas in the bush-veld, where hut-spraying experiments were being conducted.

A further series of field experiments using Proguanil in increased dosage, i. e. a single dose of 300 mg. per week, which were carried out during the 1948/49 Transmission Season, resulted in a considerable "break through" of fresh infections, which indicated that the prophylactic value of the single higher dose is less effective than the smaller (100 mg.) bi-weekly dose. It is suggested in the light of our local findings, that the most suitable prophylactic dose of Proguanil for members of the rural Swazi population of the bush-veld and the middle-veld, who have acquired a fairly high degree of immunity, is one tablet (100 mg.) three times a week at evenly spaced intervals, and that Europeans and non-immune Africans living in, or visiting malarious areas, should receive one tablet daily as an adult dose.

Field experiments with one application of wettable DDT, Benzene hexachloride, and DDT emulsion (M. 25 Klipfontein Products Ltd.) were carried out during the 1948/49 transmission season with a view to comparing the residual killing effect of each of these three insecticides on *A. gambiae* adults under local conditions. It was found that both wettable DDT and M. 25 DDT Emulsion retained their residual killing effect for approximately 4 to 5 months, and that Benzene hexachloride was far less effective. The lateness of the onset of the *A. gambiae* breeding and a low mosquito density resulted in a mild transmission season, and this detracted from the value of the experiment, and prevented us from drawing definite conclusions regarding the effect of the insecticides on malaria incidence.

An extensive hut-spraying campaign, employing DDT Emulsion (M. 25), 50% wettable DDT and a 5% solution of DDT in Kerosene was commenced in December, in the areas extending from Ezulwini to Bremersdorp, from Bremersdorp to Stegi, northwards to the Mpofu River, and southwards to Sitobela. Generally speaking, the zone in which control measures have been instituted included all Native Areas north of the Usutu River and involved the treatment of some 23,000 huts. The results of this operation will be evaluated at the close of the 1949/50 transmission season.



Cases of Malaria treated by the Staff of the Malaria Control Unit are given in the following table.

1949	Field Staff	Laboratory (x)
January	167	6
February	241	16
March	307	87
April	410	84
May	895	102
June	271	49
July	31	12
August	54	3
September	86	4
October	69	3
November	37	1
December	69	4
TOTAL	2,637	371

(NOTE: "x", all microscopically diagnosed.)





(ii) Small-pox. No confirmed cases of small-pox were reported during the year under review.

(iii) Bilharziasis.

(Hospital cases:- 67 In-Patients.)  
357 Out-Patients.)

424 cases were treated at Hospitals as compared with 530 in 1948.

(iv) Tuberculosis.

(Hospital cases:- 68 In-Patients.)  
213 Out-Patients.)

281 cases were treated during 1949 as compared with 253 in 1948, 196 in 1947 and 300 in 1946. Now that the nucleus of a Public Health Service has been created, it is proposed to undertake localised tuberculin surveys in 1950. The need for the provision of isolation facilities has for long been established, and it is encouraging to note that the possibility of instituting a vigorous and sustained campaign against tuberculosis in African territories is now under discussion.

(v) Dysentery.

(Hospital cases:- 167 In-Patients.)  
391 Out-Patients.)

The incidence of Dysentery was some 18% greater than in 1948, and the case distribution was as follows:-

Mbabane, Pigg's Peak and Mankwana District .....	75.9%
Manzini and Stegi District .....	12.7%
Hlatikulu District .....	11.4%

As in previous years, the disease was most prevalent during the last quarter of the year. When contamination of the water supplies is at its maximum, as a result of the "run off" of storm water from the polluted catchment areas. Of the 558 cases treated at hospitals, 147 (26.3%) were amoebic, 394 (70.6%) bacillary in origin, 17 (3.0%) being classified as "undifferentiated".

Fulminant amoebic colitis which is common amongst Africans in Natal, and particularly in Durban, is rare in Swaziland, but cases do occur in the Southern District which marches with the Northern Zululand border. It has been suggested by the Director of the Amoebiasis Research Unit of the Council of Scientific and Industrial Research, that these cases may be associated with a new and virulent strain of *E. histolytica*, and arrangements have been made for stools to be sent to this Unit for examination as soon as it is equipped to deal with long distance specimens by the new PVA technique. It is understood that amoebiasis in its fulminating form does not occur in Lourenco Marques. The results of treatment of Amoebiasis with Aureomycin are being carefully watched.





(vi) Diarrhoea and Enteritis.

HOSPITAL CASES	{	(a) Under two years:-
		100 In-Patients
	{	812 Out-Patients .
	{	(b) Over two years:-
		56 In-Patients
		324 Out-Patients.

As compared with 1948, the incidence of these diseases increased by 10.3%, and their distribution is given below:-

Manzini and Stegi District. ....	54.3%
Mbabane, Pigg's Peak and	
Mankaiana District. ....	27.3%
Hlatikulu District. ....	18.2%

In 1948 the bulk of the cases were derived from the Mbabane, Pigg's Peak and Mankaiana District, and relatively few cases occurred in the Manzini and Stegi District.

(vii) Venereal Diseases. The number of cases treated at various institutions throughout the Territory is given in the following Table:-



Disease	Mbabane Hospital	Mankaiana Health Centre	Other Health Centres. Mbabane, Pigg's Peak and Mankaiana District.	Hlatikulu Hospital	Health Centres Hlatikule District.	Raleigh Fitkin Memorial Hospital	Health Centres Manzini and Stegi District.	TOTAL
1. <u>SYPHILIS</u> :								
(A) Early Syphilis.	(i) Primary (ii) Secondary (iii) Early latent. (Asymptomatic)	40 340 152	37 285 52	57 122 96		114 168 -		248 915 300
(B) Late Syphilis Tertiary.	(i) Skin, Mucosal, bone, muscle, joint. (ii) Cardiovascular (iii) Neurosyphilis (iv) Late latent (Asymptomatic).	34 - - 20	- 1 - -	19 - - -		3 2 - 4		56 3 - 24
(C) Congenital	(i) Early (under 2 years of age) (ii) Late (over 2 years of age). Undifferentiated.	61 -	47 36	25 -		59 -		192 36
			342		1,084	-	1,249	2,675
TOTAL		647	458	342	319	1,084	350	1,249 4,449
II. <u>GONORRHOEA</u> .								
(i) Acute		542	91	98		157		888
(ii) Chronic		-	4	75 3	263	-	63	401 7
TOTAL		542	95	75 101	263	157	63	1,296
III. <u>OTHER VENEREAL DISEASES</u> .		15	4	6 5	-	1	-	31
IV. <u>RE-ATTENDANCES</u> .								
Syphilis.		4,561	1,944	733	1,893	4,114	2,877	5,452 21,579
Gonorrhoea.		669	5	29	3	464	48	21 1,239
Other Venereal Diseases.		8	6	4	1	-	-	- 19
TOTAL RE-ATTENDANCES.		5,238	1,955	766	1,902	4,578	2,925	5,473 22,837





The number of cases of Venereal Diseases treated during 1949 exceeded that of 1948 by 21%. Figures relating to the increase and decrease in the incidence of these diseases at certain centres in the Territory are given below:-

	Syphilis Since 1946 (a)/ Since 1947 (b)	Since 1948	Gonorrhoea Since 1946 (a)/ Since 1947 (b)	Since 1948
Mbabane.	+ 41.0% (a)	+ 28.8%	+ 215.7% (a)	+34.4%
Mankaiana.	+316.6% (a)	+ 6.2%	+ 30.0% (a)	- 2.0%
Hlatikulu.	- 20.2% (a)	-15.5%	+ 13.9% (a)	-41.8%
Goedgegun.	+155.8% (b)	+ 63.6%	-59.5% (b)	+125.0%
Bremersdorp.	- 0.6% (a)	-32.4%	+ 177.5% (a)	+ 12.1%
Stegi.	+255.2% (a)	+160	?	?

The foregoing figures suggest that while the spread of syphilis is being combatted at Bremersdorp and Hlatikulu, the disease is on the increase in other areas and particularly at Goedgegun and Mbabane. The incidence of Gonorrhoea is increasing at Bremersdorp and Mbabane, but is elsewhere declining.

As a first step in an organised syphilis control effort the bloods of some 1,100 persons attending the Mbabane Hospital were taken at random for serological testing, with the following results:-

17.7% Positive.  
9.1% Doubtful.  
73.2% Negative.

As conditions, such as malaria, which are frequently responsible for biological false/positive reactions were absent from the series examined, and no repeat cases were included, these figures are of some significance.

(viii) LEPROSY. The staff of the Mbuluzi Leper Hospital which is under the management and control of the Nazarene Mission, consisted of a Medical Superintendent (non-resident), a Lay Superintendent (resident), an European matron, a nurse, a chaplain, an Agricultural Demonstrator, and three labourers.

The number of in-patients on the 31st December was 75, i.e. 36 adult males, 27 adult females, 5 male and 7 female children, as compared with 59 at the end of 1948.

#### Health of patients:

There has been a general improvement in the health of the patients during the year. Three deaths occurred amongst advanced Lepromatous cases, the causes of death being as follows:-



Pulmonary Tuberculosis	1
Nephritis	1
Laryngismus	1

One case died from an unknown cause while on leave from the Hospital.

Additions to population.

	Males	Females	TOTAL
Admissions	20	19	39
Re-admissions	1	-	1
Desertions	-	-	-
	21	19	40

Losses in population.

	Males	Females	TOTAL
Deaths	3	1	4
Desertions	-	-	-
Discharges	7	12	19
	10	13	23

Origin of Patients admitted.

District	Males	Females	TOTAL
Mbabane	10	9	19
Mankaiana	4	4	8
Bremersdorp	-	-	-
Stegi	2	4	6
Pigg's Peak	5	1	6
Hlatikulu	-	1	1
	21	19	40

Duration of disease before admission.

Duration	Admission	Percentage
0 - 1 years	11	27.5
1 - 2 years	8	20.0
3 - 4 years	7	17.5
Over 5 years	14	35.0





Classification on admission.

Classification	Admission	Percentage
Neural	22	55.0
Lepromatous	13	32.5
Mixed	5	12.5

Average Age on admission: 34.4 years.

Proportion of children to total admissions.

There were 7 admissions of children under 16 (i.e. 17.5% of the total) as compared with 6 in 1948.

Treatment (General)

Out-patients attendances numbered 3,708. 47 cases were admitted to the Hospital suffering from the following conditions:

Leper Reaction	7
Influenza	7
Trophic ulcers	4
Minor septic conditions	4
Observation cases	4
Cervical adenitis	3
Taeniasis	3
Cellulitis	2
Ante-natal	2
Pregnancy	2
Hysteria	2
Ulceration of larynx	1
Renal failure	1
Dental caries	1
Pulmonary Tuberculosis	1
Sulphetrone Reaction	1
Sprain	1
Spinal caries	1
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	47 (1,565 In-patient days)

Anti-Leprotic Treatment.

(a) Chaulmoogra Oil. Neural cases were treated with bi-weekly intradermal injections of Chaulmoogra and peanut oil in equal parts. Nine Patients were treated with Ethyl Esters of Hydrocarpus oil and one with "Moogrol". The marked improvement in the condition of those undergoing treatment, and the number of cases discharged to their homes as "Symptom free" have encouraged all patients to undergo treatment, and the level of attendances has been excellent.

It is of interest to note that one patient was receiving 40 mls. of the Hydrocarpus Oil mixture twice weekly for some weeks prior to her discharge without exhibiting any signs of intolerance.





Intra-dermal Treatment.

Total Attendance	4,366
Number of injection days	96
Number of cases treated	51
Number of patients discharged	19

(b) Sulphetrone. Most of the Lepromatous cases have been given sulphetrone, and the majority have shown improvement. A limited number of cases have been receiving the drug by the intra-muscular route for some months, and this form of administration has been well tolerated.

Number of patients receiving Sulphetrone orally.....	25
" " " " " intra-muscularly	5
Number of injections given .....	85

Regular monthly Haemoglobin estimations were carried out on all cases receiving Sulphetrone, and total Blood Counts were also frequently performed.

With a view to reducing costs, the treatment of Lepromatous and Tuberculoid cases with Diamino-diphenyl Sulphone (D.A.D.P.S.), on the lines suggested by Dr. Lowe, Director, Leprosy Research Unit, Nigeria Leprosy Service, Uzuakoli, Nigeria, will be introduced in 1950.

Laboratory Examinations.

883 smears were examined for *Microbacterium leprae* with the following results:

	Positive		Negative		TOTAL
	Nasal	Skin	Nasal	Skin	
Lepromatous	77	231	7	20	335
Mixed	11	32	2	10	55
Neural	8	20	120	345	493

Leprosy Survey.

31,104 persons have been examined since the commencement of the Leprosy Survey, and 68 Lepers have been detected. The incidence of the disease, which continues to diminish as the Survey proceeds, is now 2.1 per 1000. The indications that Leprosy is mainly confined to the highveld areas, and that its distribution is focal in character have been confirmed by recent findings.

(ix) Typhoid and Paratyphoid Fever.

41 cases were admitted to Government Hospitals in the Mbabane, Pigg's Peak and Mankaiana (34) and Hlatikulu (7) Districts and 4 deaths occurred as compared with 10 cases and no deaths in 1948. Localised outbreaks of the disease occurred at the Native Land Settlement (January), Msunduzi Township (March), St. Joseph's Mission, Br'emersdorp (March-April), and on a farm at Balegane (April) where, in addition to the institution of ordinary control measures, mass inoculation with anti-enteric vaccine (T.A.B.) was carried out. Sporadic cases occurred throughout the year and the numbers reported are given in the





following table:-

District	Cases	Deaths
Mbabane, Pigg's Peak and Mankaiana	34	3
Manzini and Stegi District	46	5
Hlatikulu District	9	1

(x) Diphtheria. One case was reported from the Hlatikulu District, two from the Mbabane, Pigg's Peak and Mankaiana Districts and two from the Manzini and Stegi Districts. There were two deaths.

(xi) Whooping Cough. The disease was exceptionally common during the year and its distribution was as follows:-

Hlatikulu District .....	261
Mbabane, Pigg's Peak and Mankaiana District	199
Manzini and Stegi District .....	45
	<hr/>
	505

(xii) Acute Poliomyelitis. Two cases were reported, one from the Southern District, and one from the Havelock Mine.

(xiii) Measles. In contradistinction to the previous year, during which Measles was most prevalent in the Southern District, the bulk of the cases occurred in the Northern District in 1949, and 59.5% of these were reported from the Havelock Mine area. The case distribution was as follows:-

Mbabane, Pigg's Peak and Mankaiana District	193
Manzini and Stegi District .....	73
Hlatikulu District .....	18
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	284

(xiv) Chicken-pox. 52 cases were reported as compared with 140 in 1948.

(xv) Relapsing Fever. *Ornithodoros moubata* infestation was discovered in a Native hut on an European farm at Helehele, which is situated some six miles from Bremersdorp on the Stegi road, and fifteen kraals were found to be infested in the Mbukwane area of the Mahamba District. The Helehele case is the first instance in which *O. Moubata* has been found in a typical middle-veld area.

(xvi) Tick Typhus. This disease was unusually prevalent in the year under review, 24 cases (23 European and 1 African) being reported, as compared with a total of 5 during the previous three years. All cases, other than two from the Hlatikulu District occurred in the Mbabane, Pigg's Peak and Mankaiana District, and mainly amongst residents of Mbabane, and its vicinity. The majority of the cases were reported in





April and December. In September, Government Hospitals were provided with an emergency stock of Aureomycin hydrochloride (Lederle), and since then five cases have been treated with dramatic results. The routine treatment has been one capsule (250 mg.) given orally 4-hourly up to a total of 16, i.e. 4 gm.

(xvii) Food poisoning. An explosive out-break of Bacterial food poisoning of the "Toxin" type occurred at Mbabane in January, 1949, following on the ingestion of cooked gammon which was found to be infected with *Staphylococcus aureus*. Investigation revealed that contamination took place subsequent to dispatch of the food from the Factory.

### Vital Statistics.

The 1946 Census figures are as follows:-

	Males	Females	Total
Europeans.	1,727	1,474	3,201
Coloured.	359	380	739
Swazis.	91,014	87,617	178,631)
Foreign Natives.	2,371	267	2,638)
Asiatics.	5	1	6
TOTAL	95,476	89,739	185,215

Total European population	3,201
Total European births	82
Total European deaths	25
Birth Rate per 1000	26.5
Death Rate per 1000	7.8
Infantile mortality	11.7

Table showing causes of Deaths.

Causes of Death	Number of Deaths
Heart Failure	4
Coronary Thrombosis	3
Cerebral Haemorrhage	2
Auricular Fibrillation	1
Myocarditis	1
Cerebral thrombosis	1
Embolism	1
Gastric Haemorrhage	1
Paralysis	1
Bacillary Dysentery	1
Pneumonia	1
Nephritis	2
Diabetes	1
Gastro-enteritis	1
Cancer of the kidneys	1
Bronchitis	1
Suicide	1
Toxiemia	1
	<u>25</u>



Registration is not compulsory in the case of the Native population.

### III. HYGIENE AND SANITATION.

#### A. (i) Preventative Measures.

(a) Malaria. Control measures in rural areas were inaugurated in December on a scale hitherto unprecedented in Swaziland. Anti-malaria measures in Bremersdorp were so effective that only one fresh infection was acquired in the township, which, in the past, was a highly malarious area.

(b) Smallpox. As in previous years, Police, prisoners, warders, and Medical Department staff were vaccinated as a matter of routine, but in the absence of any cases of variola no mass vaccination was undertaken.

(c) Enteric Fever. Following on the occurrence of two cases of Typhoid in the Msunduzá Township, funds were provided for the installation of water-borne sanitation to serve the needs of the inhabitants, and arrangements have been made for ~~the~~ automatic-flushing public latrines (4 blocks each containing 12 compartments) to be constructed early in the new year. An unusually large number of Europeans and Africans were immunised against enteric fever, in the Manzini and Stegi, Mbabane, Pigg's Peak and Manzini Districts, from which the bulk of the cases were reported during 1949.

(d) Diphtheria. Prophylactic Anti-Diphtheria and Whooping cough vaccine was administered to a number of children.

(e) Whooping cough. In the Southern District in which the case mortality of this disease was high, a fact which is not reflected in the return of Diseases as serious cases were frequently removed from hospitals before death supervened, prophylactic Pertussis vaccine was administered to infants in an attempt to lower the death rate.

(f) Tick Typhus. In view of the frequency with which this disease was met with during 1949, Public Notices were issued indicating the precautions which should be taken to reduce the risk of contracting infection.

(ii) General measures of Sanitation. The routine quarterly bacteriological analyses of specimens from the treated water supplies at Bremersdorp, Hlatikulu and Goedgegun have been regularly carried out, and the results still indicate the need for the provision of a more efficient system of chlorination. The Bremersdorp supply has been improved by the installation of an electrically operated pump and by modifications made to the settling tanks. The Goedgegun supply is both inadequate and precarious, but the sum of £5,000 has been inserted in the draft estimates 1950/51 to meet the cost of improvements. Water boring operations at Stegi have not as yet been attended with success. The urgency







of the need for a piped water supply for Mbabane cannot be over stressed. The process of replacing pit latrines and pail closets by water-borne sanitation is proceeding satisfactorily in the townships. With the exception of Hlatikulu, some measure of improvement has been attained in the general sanitary condition of all townships.

The new Health Office at Bremersdorp was completed in December and a Medical Officer (Health) and Health Inspector are to be appointed early in 1950. When the staff is provided, a public health campaign designed to raise the general standard of health of the community, and having the following elements in its programme, will be inaugurated:-

- (a) Prevention of communicable diseases.
- (b) Sanitation, including a better standard of housing improved water supplies, and the more efficient disposal of wastes.
- (c) School health.
- (d) Maternal and Child Welfare.
- (e) Food and nutrition.
- (f) personal Hygiene.
- (g) Vital Statistics.
- (h) Health Education and propaganda.

(iii) School Hygiene. The pupils at the Trades School, Mbabane, St. Marks School, Mbabane, and the Swazi National School Mathapha, were medically examined at the beginning of each term, and the children at the Goedgegun Government School were systematically examined on two occasions during the year. An organised system of school medical inspection by the Medical Officer (Health) is to be brought into operation in 1950.

(iv) Labour Conditions. All members of the Public Works Department labour force were examined by Medical Officers prior to engagement, and the question of arranging for all contract labour to be medically inspected before being indentured is being explored. High building costs are still hampering improvement in the housing of African labour employed on farms and in urban areas.

(v) Buildings. Eighteen new houses were erected by the Public Works Department at the following stations for the accommodation of European Government personnel:-

Place	"D" Type	"E" Type
Mbabane	4	5
Bremersdorp	3	1
Goedgegun	-	4
Hlatikulu	-	1



Following an improvement in the supply position, several new buildings were constructed in the various townships as a consequence of an extension of private enterprise.

Abattoirs were provided at Goedgegun and Stegi.

The standard of construction of houses for both Europeans and Africans in the urban areas is steadily improving.

(vi) Food in relation to Health and Disease. The increase in the quantity and variety of the food crops grown for local consumption, which has resulted from the efforts of the Agricultural Department, is being progressively maintained, and the increase in the number of butcheries in Native areas is indicative of the growing appreciation of the value of a regular and well-balanced diet.

B. Measures taken to spread the knowledge of Hygiene and Sanitation.

The schools, the doctor-patient relationship, and the advice given to the patients attending Health Centres, are the main media through which the knowledge of hygiene and sanitation is disseminated. This work is being reinforced by the formation of Junior Red Cross Links in schools.

C. Training of Personnel.

The only nursing school in this territory is that attached to the Raleigh Fitkin Memorial Hospital, Bremersdorp, which has recently been registered under the High Commission Territories Nursing Council as a full training school. The previous output of this institution which amount to an average of four female nurses each year, was insufficient to meet the needs of the hospitals and Health Centres, but as a result of financial assistance to the extent of £1,000 provided from the Colonial Development and Welfare Fund, on a pound for pound basis, the accommodation is being extended to permit of the number of Government-subsidised pupil nurses being increased from 10 to 20.

The following are the numbers of students in training:-

4th year	5
3rd year	4
2nd year	8
1st year	8
	<hr/>
	25
	<hr/>

No facilities exist for the training of Subordinate male Medical and Health Staff, and in this connection it has been recommended that consideration be given to the establishment of a Medical Training Depôt for Hospital Assistants, Compounders and Laboratory Assistants, which would serve the needs of the three High Commission Territories, and that bursaries be provided for the training of Health Staff at Fort Hare, or at other centres in the Union.





IV. MATERNITY AND CHILD WELFARE.(a) Mbabane, Pigg's Peak and Mankaiana District.

26 Europeans and 801 Africans attended the weekly ante-natal clinic at Mbabane Hospital, where 299 confinements were conducted, as compared with 339 in 1948 and 303 in 1947. 182 Infants and 200 mothers received attention at the Maternity and Child Welfare Clinic at Mathapha.

The number of maternity cases treated at Health Centres is shown in the following table:-

Health Centre	No. of cases.
Mankaiana	114
Horo	9
Government Farm	5
Hebron (Temporarily closed)	-
Total	128

(b) Manzini and Stegi District.Raleigh Fitkin Memorial Hospital, Bremersdorp.

Ante-natal attendance	1,629
Child Welfare attendances	2,542
Confinements	252

Table showing the number of maternity cases at Mission Health Centres:-

Health Centre	No. of Cases
Stegi	64
Endingeni	48
Pigg's Peak	29
Mliba	15
Mafuteni	13
Bhekinkosi	7
Balegane	9
Ebenezer	39
Malinda	5
Total	229



(c) Hlatikulu District.

Clinic	Ante-natal First Attendances.	Confinements.
Hlatikulu Hospital	452	202
Goedgegun	236	1
Mhlotsheni	266	5
Hluti	138	1
Mahamba	122	8
Sipofaneni	107	2
St. Phillips	72	5
Total	1,393	224

V. HOSPITALS AND DISPENSARIES (HEALTH CENTRES).(a) Mbabane Hospital

Number of beds (European)	4
Number of beds (African)	46
Number of cots ( " )	6
	<u>56</u>

Daily average No. of In-patients (European)	1.2
" " " " " (Coloured)	0.59
" " " " " (African)	79.5

Staff.

- 2 Medical Officers.
- 3 European Nursing Sisters.
- 1 Dispenser-Storekeeper-Radiographer.
- 13 African Nurses.
- 1 Out-patients Attendant.
- 8 Ward attendants.

	1944	1945	1946	1947	1948	1949
Admissions	1,642	1,898	2,287	2,213	2,210	2,337 (76)
Deaths	62	50	41	28	51	55 (-)
Confinements	134	152	170	303	339	299 (18)
Operations	130	176	215	193	297	398 (70)
Out-patients (new cases)	9,001	11,403	8,916	8,547	8,945	9,422 (164)
Out-patients (re-attendances)	1,043	838	3,913	6,953	9,173	11,472 (3,022)

(Note: European cases, which are included in the Totals, are shown in brackets.)





An annex, consisting of four cement block rondavels, for the accommodation of persons attending the hospital, is under construction and will be ready for use early in 1950. The buildings have been provided with the object of reducing overcrowding. Under Colonial Development and Welfare Fund Scheme No. D. 1085, £40,000 has been provided for extensions, and supplementation of equipment, at the Mbabane Hospital during a three-year period which commenced on the 1st April, 1949. During the year under review, the existing European Nursing Sisters' Quarters have been extended to provide 3 bedrooms with verandahs, a lounge, bathroom and W.C. One existing bedroom has been converted into a box-room and linen room, and alterations have been carried out which provide self-contained accommodation for the Nursing Sister-in-Charge. The servants' quarters have also been extended.

Work has started on extensions to the Out-patient Department, the construction of a 28-bedded African Female Ward, the erection of a semi-mechanised laundry, and the installation of a steam plant, all of which are expected to be completed by September, 1950. Plans have been completed for additions to the main Hospital block, which will afford accommodation for 81 African and 10 European beds, and include an African children's ward, an up-to-date theatre unit, and kitchens fitted with modern cooking appliances.

(b) Hlatikulu Hospital.

Number of beds	(European)	8
Number of beds	(Eurafrican)	3
Number of beds	(African)	30
Number of cots	(African)	3

Daily average number of In-patients	(European)	1.7
" " " " "	(Coloured)	0.52
" " " " "	(African)	66.6

Staff.

- 2 Medical Officers.
- 3 European Nursing Sisters.
- 1 European Hospital Assistant-Dispenser.
- 11 African Nurses,
- 1 Dispensing Orderly.
- 4 Ward Attendants.

	1943	1944	1945	1946	1947	1948	1949
Admissions	1,324	1,680	1,762	2,245	1,647	1,313	1,483 (94)
Deaths	25	35	35	46	43	50	56 (4)
Confinements	48	98	120	150	188	198	202 (22)
Operations	151	153	199	112	256	241	242
Out-patients (new cases)		8,026	9,146	12,145	6,955	5,169	4,414 (427)
Out-patients (re-attendances)					2,342	2,894	3,549 (493)



The sum of £30,000 has been allocated under Colonial Development and Welfare Fund Scheme No. D. 1085 to meet the cost of extensions and additions to the Hlatikulu Hospital, which include the following works:

- (i) Additional general wards for African patients.
- (ii) An African maternity unit.
- (iii) Eurafrican wards.
- (iv) Accommodation for infectious diseases.
- (v) Improved out-patients accommodation.
- (vi) Increased office and store accommodation.
- (vii) Additional African staff quarters.
- (viii) Extensions to the existing European Nursing Sisters' quarters.
- (ix) The installation of a diesel-operated electric lighting system.

Plans for the extensions to the European Nursing Sisters' quarters have been prepared and work is expected to commence early in 1950. A new N. F. 1. type house was erected during the year for the accommodation of a male African Nurse.

(c) Raleigh Fitkin Memorial Hospital, Bremersdorp.

Number of beds (European)	8
Number of beds (Eurafrican)	4
Number of beds (African)	<u>68</u>
	<u>80</u>

Admissions.

Year	European	Eurafrican	African	Deaths
1946	281	116	2,154	42
1947	264	117	1,814	60
1948	232	92	2,082	82
1949	201	80	1,823	83

Daily average number of In-patients (European)	4.6
" " " " " (Eurafrican)	1.6
" " " " " (African)	57.5

Out-patients.

Year	New cases	Re-attendances	Total
1946	5,540	5,500	11,040
1947	5,283	4,680	9,963
1948	9,253	8,314	17,567
1949	9,404	8,620	18,024





Staff.

3 Medical Officers.  
 6 Nursing Sisters.  
 1 Midwife.  
 2 African Nurses.  
 25 Probationer Nurses.

(d) Havelock Mine Hospital, Emlembe.

Data relating to numbers of the General Native Population who received treatment at the Mine Hospital are given below:-

	1946	1947	1948	1949
Admissions	141	113	81	89
Out-patients (new cases)	333	47	79	79
Re-attendances	2,285	128	147	395
Daily average No. of In-patients.	3.3	3.4	2.7	4.18

(e) Dispensaries (Health Centres).

Statistics relating to the number of cases treated at Government and Mission Health Centres are given in the following tables:-

Cases Treated at Government Health Centres.

Name of Health Centre	In-Patients	Out-patients				No. of Confinements	
		New Cases		Re-attendances			
		E.	N.E.	E.	N.E.	E.	N.E.
Horo.	-	2	2493	-	521	-	9
Hebron. (Dec.)	-	-	76	-	31	-	-
Government Farm	-	2	1096	-	692	-	5
Goedgegun	-	555	2395	362	1383	2	1
Mhlotsheni	-	74	2094	33	1551	-	5
Hluti	-	128	1991	72	1592	-	1
Mahamba	-	1	2135	2	1355	-	8
Sipofaneni	-	1	1228	-	360	-	2
St. Phillips	-	2	2620	2	4154	-	5
Totals	-	765	16128	471	11639	2	36
Grand Totals	-	16893		12110		38	
Mankaiana. x	736	38	7289	59	3030●	-	114

"E" = European, "N.E." = Non-European.

"x", Figures additional to those shown in the Returns of Diseases for Government Hospitals (Appendix I).



The figures for the past four years are given below:-

(i) Health Centres (General)

Year	New Out-patients	Re-attendances	Total Attendances	Confinements
1946	15,201	4,228	19,429	68
1947	14,109	8,151	22,260	47
1948	15,347	14,235	29,582	34
1949	16,893	12,110	29,003	38

All Health Centres, with the exception of Sipofaneni, were repaired and redecorated, and various major structural improvements were carried out at the Clinics at Goedgegun and Hluti.

(ii) Mankaiana Health Centre. (16 beds).

Year	Admissions	Out-patients				Total Attendances	Confinements
		New Cases		Re-attendances			
		E.	N.E.	E.	N.E.		
1946	957	25	7244	10	3135	10414	122
1947	724	36	5693	19	3999	9747	100
1948	762	43	6727	47	2853	9670	94
1949	736	38	7289	59	3030	10416	114

The average number of In-patients per day at Mankaiana Health Centre was 23.7 in 1949, as compared with 19.6 and 25.8 in 1948 and 1947 respectively. Two new six-bedded wards for the accommodation of female cases were completed at the end of December, since when the authorized number of beds at the Centre has been increased from 8 to 16. The In-patient accommodation now comprises a male ward (4 beds), a female general ward (6 beds), a maternity ward (6 beds), a labour ward and 2 rooms for the use of V. D. cases. An additional staff quarter and pack-store was also provided.

Cases treated at Nazarene Mission Health Centres.

Health Centre		In-patients.	Out-patients.				No. of	
			New Cases		Re-attendances		Confinements	
			E.	N.E.	E.	N.E.	E.	N.E.
Stegi	x	335	255	4232	131	5022	-	64
Endingeni	x	117	-	671	-	2775	-	48
Piggs Peak	x	280	96	2374	54	2341	-	29
Mliba	x	56	-	867	-	922	-	15
Mafuteni		13	-	547	-	584	-	13
Bhekinkosi		10	-	312	-	395	-	7
Balegane		6	-	505	-	652	-	9
Ebenezer								
(Pilgrim Holiness Church)		68	-	1243	-	645	-	39
Malinda (8 mths)		10	-	384	-	244	-	5
Totals		895	351	11135	185	13580	-	229

"x" = Government subsidised.





The total attendances at Mission Health Centres was 25,251, as compared with 24,832 in 1948 and 22,504 in 1947. The progressive increase is mainly due to the opening of new Centres and to an increase in the re-attendance rate.

## VI.

PRISONS.

The prisons at Mbabane, Bremersdorp and Hlatikulu were inspected at weekly intervals, and the lock-ups at Hluti, Lubuli and Gollel were also visited by Medical Officers. The general state of health of prisoners has been satisfactory.

## VII.

SCIENTIFIC.

Details of the routine laboratory examinations carried out at various institutions are shown in the following table:-

		Public Health Laboratory Bremersdorp	Mbabane Hospital	Hlatikulu Hospital.	Raleigh Fitkin Memo- rial Hos- pital.
Blood films		9792	617		1425
Total Blood Counts		172	-		15
Throat & Nose Swabs (C. Diphtheriae)		25	7		-
Bacteriological Smears		39	1447		93
Faeces		10	388		104
Urines			810		3190
Sputa		-	350		89
Serological tests for (Syphilis)		1103	-		-
Identification of adult mosquitos		1230	-		-
Identification of Mos- quito larvae		472	-		-
Identification of snails		731	-		-
Cerebrospinal fluids		-	-		-
Agglutination tests		114	-		-
Gastric Analyses		-	-		3
Unspecified		-	-	1220	-
Totals	1949	13688	3619	1220	4919
Totals	1948	15641	2865	1813	4912
Totals	1947	16428	2013	1427	3903

In December, the Public Health Laboratory was transferred to the new Health Office, at Bremersdorp, which was constructed at a cost of £2,500 from funds provided under the Colonial Development and Welfare Fund Scheme No. D. 1084. The building comprises offices for the Malaria Medical Officer, the Medical Officer (Health) and the Health Inspector, two laboratories, a lecture room for African Sani-



tation Staff, store-rooms for insecticides and field equipment, and the usual appurtenances. The laboratory is well equipped, and in addition to its protozoological and entomological work, it will, with effect from January, 1950, perform the bulk of the routine serodiagnostic tests, etc., which had hitherto to be carried out outside the Territory.

VIII. MEDICO-LEGAL WORK, ETC.

	Mbabane, Pigg's Peak and Mankaiana District.	Hlatikulu District.	Manzini and Stegi District	Total
Post-Mortem Examinations	35	33	22	90
Examinations for Assault, etc.	21	210	412	643
Examinations for tax exemption	27	193	62	282
Totals	83	436	496	1015

In conclusion, I wish to express my sincere appreciation of the loyal and efficient manner in which all members of the staff carried out the various and ever-increasing duties assigned to them.

(Sgd.) J. C. J. CALLANAN.

DIRECTOR OF MEDICAL SERVICES.





ANNUAL REPORT - 1949.

PUBLIC HEALTH LABORATORY - BREMERSDORP.

A. STAFF.

(1) Miss L. O'C. Black B.Sc., laboratory assistant, resigned from the department on September 1st 1949. Her post was filled on December 1st by Miss J. Bredell B.Sc.

(2) The African Malarial Assistant Staff was increased by one new member. Of the present total of eight, seven of these assistants are now stationed over various areas in the field.

B. NEW PUBLIC HEALTH OFFICE AND LABORATORY.

(3) During December the Public Health Offices were completed, and the staff moved in. The new building is an enormous improvement upon the previous laboratory, which was far too limited in space for the extension of our laboratory services.

C. CLIMATIC CONDITIONS AND MOSQUITO INFESTATION.

(4) The average rainfall for the years 1948/49 is shown in Table I:

Table I - AVERAGE MONTHLY RAINFALL 1948/49.

	<u>1948</u>	<u>1949</u>
January .....	5.3	3.7
February .....	5.0	7.3
March .....	4.8	2.6
April .....	1.1	2.0
May .....	0.2	1.6
June .....	0.0	1.3
July .....	0.1	0.0
August .....	0.1	0.1
September .....	1.6	2.8
October .....	2.6	1.9
November .....	3.4	6.5
December .....	3.0	6.0
	<u>27.2</u>	<u>35.8</u>

(5) As may be noted, the rainfall during the Transmission Season of 1949 was below average, especially in the early preceeding Spring (i.e. November and December 1948).

(6) Owing to this, the breeding of A. gambiae during the early months of the Transmission Season was particularly limited and isolated which resulted in a remarkably low mosquito infestation of huts during this period (January and February). This is illustrated in Table II:

Table II - AVERAGE MOSQUITO DENSITY PER HUT -  
DURING TRANSMISSION SEASONS 1948/49.

	<u>1948</u>	<u>1949</u>
January .....	20.4	1.2
February .....	18.1	4.0
March .....	6.3	8.1
April .....	2.6	9.1
May .....	2.4	1.8
June .....	0.4	1.6
	<u>52.2</u>	<u>25.8</u>



(7) It is a point of interest that in the Non-Transmission Season of 1949 (i.e. July to October) *A. gambiae* never completely disappeared from the huts of most of the Bushveld areas, a condition quite unusual in Swaziland. The average infestation, however, did not at any stage exceed 0.02 per hut. No fresh infections during these months came to our notice.

D. MALARIA INCIDENCE.

(8) Owing to the limited breeding of *A. gambiae* and the low mosquito density, the malaria incidence during the Transmission Season of 1949 was accordingly low. Table III represents the malaria case incidence as determined by the examination of blood-slides sent in to the Public Health Laboratory by our field staff, local hospitals and health centres. It has to be remembered that these figures do not represent the actual total case incidence occurring in the territory throughout the year, this would be somewhat higher. The table reflects, however, the general position during the year, and has the advantage of recording only haematologically proved cases.

Table III - MALARIA CASE INCIDENCE 1948/49.

	<u>1948</u>	<u>1949</u>
January.....	515	180
February.....	559	216
March.....	652	424
April.....	446	352
May.....	392	505
June.....	194	260
July.....	65	35
August.....	61	85
September.....	60	113
October.....	84	98
November.....	105	73
December.....	77	103

(9) Regarding the pernicious forms of malaria treated in hospitals and health centres, reliable records of these are not available.

(10) The distribution of the Plasmodium species as determined from laboratory examinations, is as follows:

	<u>1948</u>	<u>1949</u>
Plasmodium falciparum.....	87.8%	89.3%
Plasmodium vivax.....	10.6%	10.2%
Mixed infection.....		
(P falciparum.....	1.6%	1.6%
and P. vivax)		

(11) Of the cases of Plasmodium falciparum, the following percentages showed crescents in the peripheral blood:

	<u>1948</u>	<u>1949</u>
Crescents.....	18.8%	12.4%

E. CONTROL.

(12) As pointed out in paragraph (6), the average mosquito density especially in the Middleveld areas was negligible. For this reason we omitted doing any large-scale control work in these areas. Only Police Posts, Government Experimental Farms (Mpisi and Government Aird Farm) and isolated localities were sprayed with D.D.T.

(13) In the Gollel area, as reported in my previous annual report, two temporary labourers were employed for spraying operations in order to protect the adjoining Pongola Land Settlement from malaria. These labourers were under the supervision of the European Health Inspector of Pongola.





(14) Regarding the area of Bremersdorp, a rigid control of the township was maintained during the Season. It can be placed on record that the only instance of fresh infection acquired in Bremersdorp is that of two Coloured people who slept in an open garage. As in previous years, the control work consisted of treating rivers and pools with 27% p.p. D.D.T. emulsion in a dilution of 1/300, and of spraying native quarters and European houses with D.D.T. solution (5% in Kerosene).

F. FIELD EXPERIMENTS WITH WETTABLE D.D.T., B.H.C., AND M25 EMULSION.

(15) In order to ascertain the residual killing effect on A. gambiae of the above-mentioned insecticides, and the influence of hut-spraying on the malaria incidence of rural natives in these areas, three separate districts in the Bushveld, each of approximately 20 square miles, were treated with respective insecticides. A weekly check was done on the mosquito infestation of huts throughout the Season, and two hundred children in each area were examined monthly for the presence of malaria parasites in the peripheral blood. Adjoining native areas served as controls, and an almost equal number of children were examined monthly. Results of these experiments were published in a report in July, 1949, "Field Experiments with 50% wettable D.D.T., 50% Benzene-hexachloride, and D.D.T. emulsion (M25-Klipfontein)", which paper should be consulted for details of the work done.

G. FIELD EXPERIMENTS WITH PALUDRINE.

(16) In continuation of our last year's field experiments with Paludrine, further experiments were carried out in a highly malarious area (Hereford). Our aim was to ascertain whether the increased weekly dosage to 300 mgms. Paludrine, would be sufficient to suppress an attack of malaria during the Season. One hundred children were given this prophylactic treatment and were examined, clinically and haematologically, every month for the occurrence of malaria. Results of these experiments were published in a report in August 1949, "Further Field Trials with Paludrine", which paper should be consulted for details of the work done.

H. FURTHER WORK.

(17) As the results with regard to the malaria incidence in the rural population of areas sprayed with some of the newer D.D.T. preparations were not conclusive, it is intended to further the experiments by spraying well over half of all malarious areas in Swaziland with one or other insecticide during the Transmission Season 1949/50.

(18) A preliminary survey for these spraying operations was done during the months September to November 1949. In each district to be sprayed, the number of native huts was counted by our field staff, and an estimate of the inhabitants in each hut recorded. Well over 17,000 huts were counted, each to be sprayed once a season with either D.D.T. emulsion, wettable D.D.T., or a mixture of D.D.T. and Gammexane (as wettable powder).

(19) The areas concerned comprise the Middleveld from Ezulweni to Bremersdorp and from Mhlanya to the Usutu valley, and the Bushveld from Bremersdorp to Stegi, extending to the North over the Komati river as far as Mpofu and to the South as far as the Usutu. The Bushveld areas South of Usutu will not be sprayed, and a comparison will be made between the malaria incidence in sprayed and non-sprayed areas.

(20) During November and December blood-slides were taken from approximately five-hundred children in Bush- and Middleveld areas to be sprayed, in order to ascertain the parasite rate in the Non-Transmission Season.





(21) It is hoped that in carrying out this large-scale experiment during the Transmission Season of 1950, we shall be able to collect sufficient evidence to prove whether one application at the beginning of the Season, with one or other of the new insecticides, will suffice to reduce, to an appreciable extent, the incidence of malaria amongst rural natives.

## I. LABORATORY WORK.

(22) As referred to in our Annual Report of 1948, facilities have been provided for the extension of the laboratory work with a view to a general Public Health Service. In addition to the examination of blood-slides, the carrying out of Full Blood Counts etc., the following tests are now done in the laboratory:

Serological tests for Syphilis (modified Ide, Eagle).

Agglutination tests for fevers of the Salmonella group (Widal).

Rickettsiosis (Weil Felix).

# Brucellosis

Bacteriological examinations for C. diphtheria.

As from January 1st 1950, all specimens for the above-mentioned examinations, from all local hospitals and health centres, will be dealt with.

## J. STATISTICS OF LABORATORY WORK.

(23) The following is a detailed account of the routine work done in the Public Health Laboratory during the year 1949 (figures in brackets are those for 1948):

1. Blood-slide examinations for malaria parasites, from local hospitals .....	1,635	(2,234)
2. Blood-slide examinations for malaria parasites sent in by field staff .....	3,717	(3,609)
3. Blood-slide examinations for malaria parasites in connection with Paludrine experiments .....	1,320	(5,034)
4. Blood-slide examinations for malaria parasites in connection with Insecticide experiments .....	3,120	(570)
5. Full Blood Counts .....	172	(204)
6. Serological tests for Syphilis .....	1,103	(23)
7. Agglutination tests .....	114	(Nil)
8. Bacteriological examinations for C. diphtheria .....	25	(6)
9. Bacteriological Smear and Stool examinations .....	49	(112)
10. Entomological examinations:		
a. Identification of adult mosquitoes .....	1,230	
b. Identification of mosquito larvae .....	472	
c. Identification of snails .....	731	

(24) With regard to the serological tests for Syphilis, it is interesting to note that of the 1103 tests carried out 17.7% gave a positive and 9.1% a doubtful reaction. Most of the bloods examined were taken from in- and out-patients of the Mbabane hospital. 1100 sample tests collected from one hospital and a few health centres, is naturally too small a figure from which to ascertain the incidence of Syphilis amongst the adult Swazi. It is hoped, however, that more conclusive figures will be obtained in 1950, when bloods from all local hospitals and health centres in the territory will be examined in this laboratory.

(25) From the statistical figures given above, it is evident that the routine laboratory work has again increased over the past year, and it is likely to go further in 1950. The entire laboratory work is done by the Malaria Medical Officer and one assistant; in the case of leave, or when the Malaria Medical Officer is in the field, the work has to be done by one person alone.





K.

PUBLICATIONS.

(26) During 1949 the following papers were submitted for publication:

"Field Experiments with wettable D.D.T., 50% Benzene-hexachloride, and D.D.T. emulsion (M25 Klipfontein)" ..... July 1949.

"Further Field Trials with Paludrine amongst Rural Natives in Swaziland" ..... August 1949.



## RETURN OF DISEASES AND DEATHS (In-patients).

FOR THE YEAR 1949.

DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total Cases Treated.		Re- maining in hospital at end of year		Out- patients	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
I. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES:												
1. Enteric Group												
(a) Typhoid Fever		1	2	32	-	4	2	32	-	1	1	
(b) Paratyphoid A.												
(c) Paratyphoid B.												
(d) Type not defined				7				7				
2. Typhus (Tick Typhus)			4				4		-		19	1
3. Relapsing Fever												
4. Undulant Fever												
5. Malaria -												
(a) Tertian												
(b) Quartan												
(c) Aestivo-autumnal		1	7	124	-	2	7	123	-	2	5	43
(d) Clinical			1	2			1	2	-		12	102
(e) Cachexia												
(f) Blackwater												
6. Smallpox Alastrim												
7. Measles		2	2	22		1	2	22	-	2	40	73
8. Scarlet Fever												
9. Whooping Cough				61		2		56		5	14	369
10. Diphtheria				1		1		1			1	
11. Influenza			7	41			7	41	-		86	399
12. Miliary Fever												
13. Mumps				1				1			5	13
14. Cholera												
15. Epidemic Diarrhoea			1				1		-			
16. Dysentery -												
(a) Amoebic		2	2	68		2	2	66	-	4	6	21
(b) Bacillary		6	1	72		6	1	75	-	3	43	286
(c) Undefined or due to other causes												
Total carried forward	-	12	27	431	-	18	27	426	-	17	232	1307

E = EUROPEANS.

A = AFRICANS.





DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total Cases Treated.		Re- maining in hospital at end of year		Out- patients	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward		12	27	431	-	18	27	426	-	17	232	1307
I. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES: (Contd.)												
17. Plague -												
(a) Bubonic												
(b) Pneumonic												
(c) Septicaemic												1
(d) Undefined												
18. Yellow Fever												
19. Spirochaetosis icte- ro-haemorrhagica												
20. Leprosy				1				1				12
21. Erysipelas										3		
22. Acute Poliomyelitis				1				1				2
23. Encephalitis Lethar- gica												
24. Epidemic Cerebro- spinal Fever				3		1		3				
25. Other Epidemic Dis- eases -												
(a) Rubeola (German Measles)											4	
(b) Varicella (Chickenpox)				6				6			5	27
(c) Kala-azar												
(d) Phlebotomus Fever												
(e) Dengue												
(f) Epidemic Dropsy												
(g) Yaws												
(h) Trypanosomiasis												
(i) Infective Mono- nucleosis											1	
26. Glanders												
27. Anthrax												
28. Rabies												
29. Tetanus				1				1				
30. Mycosis												
31. Tuberculosis, Pul- monary and Laryn- geal		1		40		9		41			7	145
32. Tuberculosis of the Meninges or Central Nervous System		1		1				2				
33. Tuberculosis of the Intestines or Peri- toneum				8		2		6				
Total carried forward		14	27	492		30	27	489	-	17	252	1494



DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total Cases Treated.		Re- maining in hospital at end of year		Out- patients	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total Brought forward		14	27	492		30	27	489	-	17	252	1494
I. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES: (Contd.)												
34. Tuberculosis of the Vertebral Column				1				1				
35. Tuberculosis of Bones and Joints		1						1			1	3
36. Tuberculosis of other Organs -												
(a) Skin or Subcuta- neous Tissue (Lupus)		1		2				3				
(b) Bones				1				1				2
(c) Lymphatic System				6				6				11
(d) Genito-urinary				3				3				
(e) Other organs												
37. Tuberculosis dis- seminated -												
(a) Acute												
(b) Chronic												
38. Syphilis -												
(a) Primary		1		20				21			9	77
(b) Secondary		8		252				243		17	3	413
(c) Tertiary				30		2		25		5		60
(d) Hereditary				42		1		40		2		77
(e) Period not indicated				3				3				22
39. Soft Chancre											1	12
40. (a) Gonorrhoea and complications		18		119				136		1	19	586
(b) Gonorrhoeal Ophthalmia				3				3				2
(c) Gonorrhoeal Arthritis		1						1				1
(d) Granuloma Venereum				3				3				
41. Septicaemia				1				1				
42. Other Infectious Diseases												
II. GENERAL DISEASES NOT MENTIONED ABOVE:												
43. Cancer or other ma- lignant Tumours of the Buccal Cavity												
44. Cancer or other ma- lignant Tumours of the Stomach or Liver				2				2				
Total carried forward		44	27	980	-	33	27	982	-	42	285	2761





DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total Cases Treated.		Re- maining in hospital at end of year		Out- patients	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward		44	27	980	-	33	27	982	-	42	285	2761
II. GENERAL DISEASES NOT MENTIONED ABOVE:												
45. Cancer or other ma- lignant Tumours of the Peritoneum In- testines, Rectum				1				1			1	
46. Cancer or other ma- lignant Tumours of the Female Genital Organs				5		1		4		1		
47. Cancer or other ma- lignant Tumours of the Skin			1	4			1	4	-		3	
48. Cancer or other ma- lignant Tumours of the Breast			2				2					1
49. Cancer or other ma- lignant Tumours of Organs not speci- fied	-			2				2				
50. Tumours, non-malig- nant			1	20			1	20	-		29	29
51. Acute Rheumatism			1	8			1	7	-	1	22	326
52. Chronic Rheumatism				6				6			18	21
53. Scurvy (including Barlow's Disease				4				4				13
54. Pellagra				5				5				11
55. Beri-beri				5				5				1
56. Rickets											1	
57. Diabetes (not in- cluding Insipidus)											3	
58. Anaemia - (a) Pernicious				2				2				
(b) Other Anaemias and Chlorosis				2				2			12	98
59. Diseases of the Pituitary Body											2	
60. Diseases of the Thyroid Gland - (a) Exophthalmic Goitre			1	2			1	2	-		2	1
(b) Other diseases of the Thyroid Gland			1	2			1	2	-		3	21
Myxoedema				1				1				4
61. Diseases of the Para-Thyroid Glands											1	
Total carried forward	-	44	32	1051	-	34	32	1051	-	44	383	3291



DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total Cases Treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	44	32	1051	-	34	32	1051	-	44	383	3291
II. GENERAL DISEASES NOT MENTION ABOVE: (Contd.)												
62. Diseases of the Thy- mus												
63. Diseases of the Supra-Renal Glands											1	
64. Diseases of the Spleen				1				1				
65. Leukaemia - (a) Leukaemia (b) Hodgkin's Disease				1		1		1				
66. Alcoholism											2	
67. Chronic poisoning by mineral sub- stances (lead, mercury, etc.)												
68. Chronic poisoning by organic sub- stances (morphia, cocaine, etc.)												1
69. Other General Diseases - Auto-intoxication Purpura Haemorrhagica Haemophilia Diabetes Insipidus			1	2	1	1	1	2	-		2	
III. AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SEN- SES:												
70. Encephalitis (not in- cluding Encephalitis Lethargica)												
71. Meningitis (not in- cluding Tuberculous Meningitis or Cere- bro-spinal Meningi- tis)				3		2		3				
72. Locomotor Ataxia												
73. Other affections of the Spinal Cord												
74. Apoplexy (a) Haemorrhage		1		4		1		4			1	1
Total carried forward	-	44	33	1063	1	39	33	1063	-	44	389	3293





DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total Cases Treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward		44	33	1063	1	39	33	1063	-	44	389	3293
III. AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SEN- SES: (Contd.)												
74. Apoplexy - Contd. (b) Embolism (c) Thrombosis												1
75. Paralysis - (a) Hemiplegia (b) Other Paralyzes				1 5				5		1	1	1 1
76. General Paralysis of the Insane												
77. Other forms of Men- tal Alienation			1	5		1	1	5	-		2	17
78. Epilepsy				8		1		8			2	23
79. Eclampsia Convulsions (non-puerperal) 5 years or over												
80. Infantile Convulsions			1	1			1	1	-			
81. Chorea												
82. (a) Hysteria (b) Neuritis (c) Neurasthenia				11 10 8				11 9 7		1 1	19 79 53	14 119 33
83. Cerebral Softening												
84. Other Affections of the Nervous System, such as Paralysis Agitans				1				1			6	2
85. Affections of the Organs of Vision - (a) Conjunctivitis (b) Trachoma (c) Tumours of the Eye (d) Other affections of the Eye				58 1 18				58 1 19			36 2 27	395 7 79
86. Affections of the Ear or Mastoid Sinus		3	1	38			1	41	-		67	233
IV. AFFECTIONS OF THE CIRCULATORY SYSTEM:												
87. Pericarditis				1				1				
88. Acute Endocarditis or Myocarditis			1	2	1		1	2	-		4	
89. Angina Pectoris											5	
Total carried forward	-	48	38	1231	2	41	38	1232	-	47	692	4218



DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total cases treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	48	38	1231	2	41	38	1232	-	47	692	4218
IV. AFFECTIONS OF THE CIRCULATORY SYSTEM: (Contd.)												
90. Other Diseases of the Heart -												
(a) Valvular -												
Mitral				12		2		11		1	5	
Aortic				1				1				
Tricuspid												
Pulmonary												
(b) Myocarditis		2	1	8		2	1	10	-		5	46
91. Diseases of the Arteries -												
(a) Aneurism												
(b) Arterio- Sclerosis				1				1			12	
(c) Other diseases											2	
92. Embolism or Throm- bosis (non-cere- bral)			1	1		1	1	1	-			
93. Diseases of the Veins -			1				1		-			
Haemorrhoids											12	5
Varicose Veins				5				4		1	17	14
Phlebitis											4	1
94. Diseases of the Lymphatic System -												
Lymphangitis				8				8			8	25
Lymphadenitis, Budo (non-specific)		1		20				21			4	9
95. Haemorrhage of undetermined cause											1	
96. Other affections of the Circulatory System		1						1			1	1
97. Diseases of the Nasal Passages -												
Adenoids												1
Polypus		1						1				1
Rhinitis											41	1
Coryza				3				3			35	450
98. Affections of the Larynx -												
Laryngitis											13	5
99. Bronchitis -												
(a) Acute		1	4	70		1	4	69	-	2	92	997
(b) Chronic		2		14				16			8	49
100. Broncho-Pneumonia			3	87		10	3	85	-	2	5	29
Total Carried forward	-	56	48	1461	2	57	48	1464	-	53	957	5852





DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total cases treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	56	48	1461	2	57	48	1464	-	53	957	5852
V. AFFECTIONS OF THE RE- SPIRATORY SYSTEM: (Contd.)												
101. Pneumonia -												
(a) Lobar		2	1	96		7	1	96	-	2	5	15
(b) Unclassified											2	2
102. Pleurisy, Empyema				20		1		17		3	2	15
103. Congestion of the Lungs												
104. Gangrene of the Lungs												
105. Asthma			1	14			1	14	-		20	94
106. Pulmonary Emphysema												
107. Other affections of the lungs Pulmonary Spiro- chaetosis				4				3		1	4	9
VI. DISEASES OF THE DI- GESTIVE SYSTEM:												
108. (a) Diseases of Teeth or Gums - Caries			2	22			2	22	-		93	768
Pyorrhoea											4	16
(b) Other affections of the Mouth - Stomatitis				4				4			14	99
Glossitis, etc.												7
109. Affections of the Pharynx Tonsils - Tonsillitis		3	15	48			15	51	-		131	142
Pharyngitis											17	31
110. Affections of the Oesophagus				1				1			3	
111. (a) Ulcer of the Stomach			2				2		-		6	
(b) Ulcer of the Duodenum			3				3		-		10	
112. Other affections of the Stomach - Gastritis			4	1			4	1	-		48	143
Dyspepsia				5				5			14	457
113. Diarrhoea and Enteritis - Under two years		4		26		2		30			32	399
114. Diarrhoea and Enteritis - Two years and over				19				19			67	274
Total carried forward	-	65	76	1721	2	67	76	1727	-	59	1429	8323



DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total cases treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	65	76	1721	2	67	76	1727	-	59	1429	8323
VI. DISEASES OF THE DI- GESTIVE SYSTEM: (Contd.)												
114. Diarrhoea and En- teritis - (Cont.)												
Colitis											4	4
Ulceration												
114a Sprue												
115. Ankylostomiasis				1				1				
116. Diseases due to Intestinal Parasites -												
(a) Cestoda (Taenia)		1		6				7			7	305
(b) Trematoda (Flukes)												
(c) Nematoda (other than Ankylo- stoma) -												
Ascaris		1		4				5				81
Trichocephalus dispar.												
Trichina												
Dracunculus												
Strongylus												
Oxyuris				1				1			5	
(d) Coccidia												
(e) Other parasites												4
(f) Unclassified												
117. Appendicitis			5	8			5	8	-		15	2
118. Hernia		2	2	13			2	14	-	1	6	17
119. (a) Affections of the Anus											1	6
Fistula, etc.			2	4			2	4	-			2
(b) Other affections of the Intes- tines -				2				2			3	
Enteroptosis			2	1			2	1	-			1
Constipation			2	12			2	11	-	1	14	239
120. Acute Yellow Atrophy of the Liver												
121. Hydatid of the Liver												
122. Cirrhosis of the Liver												
(a) Alcoholic		1						1			1	
(b) Other forms												
123. Biliary Calculus												
124. Other affections of the Liver - Abscess				2		1		2				
Total carried forward	-	70	89	1775	2	68	89	1784	-	61	1487	8984





DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total cases treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	70	89	1775	2	68	89	1784	-	61	1487	8984
VI. DISEASES OF THE DI- GESTIVE SYSTEM: (Contd.)												
124. Other affections of the Liver - Contd.												
Hepatitis			1	3			1	2	-	1		5
Cholecystitis			1	3			1	3	-		7	
Jaundice				2				2				
125. Diseases of the Pancreas												
126. Peritonitis (of unknown cause)				1				1				
127. Other affections of the Digestive Sys- tem				1				1				
VII. DISEASES OF THE GE- NITO-URINARY SYSTEM (NON-VEREREAL) -												
128. Acute Nephritis				3		2		3				
129. Chronic Hephritis				2				2			1	
130. (a) Chyluria (b) Schistosomiasis		1		34		1		30		5	2	1 41
131. Other affections of the Kidneys - Payelitis			2	3			1	3	1		8	12
132. Urinary Calculus			1				1		-			1
133. Diseases of the Bladder - Cystitis			1	15		1	1	15	-		22	363
134. Diseases of the Urethra - (a) Stricture (b) Other		1		6		1		7			3 15	5
135. Diseases of the Prostate - Hypertrophy Prostatitis				1 3				1 3				3
136. Diseases (non- Venereal) of the Genital Organs of Man - Epididymitis Orchitis Hydrocele Ulcer of Penis			1	10			1	10	-		3	5 3 23 2
137. Cysts or other Non-malignant Tu- mours of the Ovaries				1				1				3
Total carried forward	-	73	96	1874	2	73	95	1879	1	67	1551	9451



DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total cases treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	73	96	1874	2	73	95	1879	-	67	1551	9451
VII. DISEASES OF THE GE- NITO-URINARY SYSTEM (NON-VENEREAL) - (Contd.)												
138. Salpingitis - Abscess of the Pel- vis		1		47				44		4	1	19
												12
139. Uterine Tumours (non-malignant)				7				7			2	1
140. Uterine Haemorrhage (non-puerperal)			1	6			1	6	-		16	19
141. (a) Metritis			2	9			2	9	-		1	2
(b) Other affections of the Female Genital Organs -				5				4		1	2	99
Displacement of Uterus			1	17			1	17	-		7	
Amenorrhoea				1				1			17	105
Dysmenorrhoea			1	3			1	3	-		14	269
Leucorrhoea				2				2			6	9
142. Diseases of the Breast (non- (non-puerperal) - Mastitis			1	2				3			1	
Abscess of Breast				11				11			5	10
											2	2
VIII. PUERPERAL STATE:												
143. (A) Normal Labour		16	39	450		1	39	447	-	19		
(B) Accidents of Pregnancy											3	
(a) Abortion			1	17		2	1	17	-		6	15
(b) Ectopic Gesta- tion												
(c) Other accidents of Pregnancy		1	4	4			4	5	-		2	
144. Puerperal Haemorr- hage												1
145. Other Accidents of Parturition			1	7	1		1	7	-			
146. Puerperal Septicae- mia				8		2		7		1		3
147. Phlegmasia Dolens												
148. Puerperal Eclampsia												
149. Sequelae of Labour				2				2				
150. Puerperal affections of the Breast				2				1		1		1
Total carried forward	-	91	146	2474	3	78	145	2473	1	83	1636	10008





DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total cases treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	91	146	2474	3	78	145	2473	1	83	1636	10008
IX. AFFECTIONS OF THE SKIN AND CELLULAR TISSUES:												
151. Gangrene				5				4		1	1	
152. Boil				2				2			30	
Carbuncle			1	4			1	4	-		4	29
153. Abscess		1	7	80		1	7	81	-		11	18
Whitlow				1				1			5	2
Cellulitis		2	2	59			2	59	-	2	36	192
154. (a) Tinea				2				2			14	32
(b) Scabies		1	1	18			1	18	-	1	11	269
155. Other Diseases of the Skin -		1	1				1	1	-		73	195
Erythema				30				30				2
Urticaria											12	56
Eczema				4				4			19	59
Herpes											4	2
Psoriasis												1
Elephantiasis												2
Myiasis												
Chigoes												
Cutaneous Lesh- maniasis												
X. DISEASES OF BONES AND ORGANS OF LOCOMOTION (OTHER THAN TUBERCU- LOUS):												
156. Diseases of Bones - Osteitis		3	1	20			1	20	-	3	2	12
157. Diseases of Joints - Arthritis		1		16				15		2	14	35
Synovitis		1		11				12			6	32
158. Other Diseases of Bones or Organs of Locomotion		1	1	6			1	7	-		15	23
XI. MALFORMATIONS:												
159. Malformations - Hydrocephalus				2				2				
Hypospadias												
Spina Bifida												
XII. DISEASES OF INFANCY:												
160. Congenital Debility				6		3		6				
161. Premature Birth			1	5		1	1	5	-			1
162. Other affections of Infancy		1		2		1		3				5
Total carried forward	-	103	161	2747	3	84	160	2748	1	102	1893	10985



DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total cases treated.		Re- maining in hospital at end of year		Out- patients.	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	103	161	2747	3	84	160	2748	1	102	1893	10985
XII. DISEASES OF INFANCY: (contd.)												
163. Infant neglect (in- fants of three months or over)		6		32		5		37		1	4	80
XIII. AFFECTIONS OF OLD AGE:												
164. Senility - Senile Dementia				6		4		6				
XIV. AFFECTIONS PRODUCED BY EXTERNAL CAUSES:												
165. Suicide by Poison- ing			1		1		1		-			
166. Corrosive Poisoning (intentional)												
167. Suicide by Gas Poisoning												
168. Suicide by Hanging or Strangulation												
169. Suicide by Drowning												
170. Suicide by Firearms												
171. Suicide by Cutting or Stabbing In- struments				2				2				1
172. Suicide by jumping from a height												
173. Suicide by crushing												
174. Other Suicides												
175. Food Poisoning - Botulism			4	1			4	1	-		6	
176. Attacks of poison- ous Animals											1	2
Snake Bite				13				12		1		2
Insect Bite				1				1			13	4
177. Other accidental poisonings				10				9		1	2	1
178. Burns (by Fire)		2	1	35		4	-	34	1	3	4	44
179. Burns (other than by Fire)		2		22				23		1	7	52
180. Suffocation (ac- cidental)												
181. Poisoning by Gas (accidental)												
Total carried forward	-	113	167	2869	4	97	165	2873	2	109	1930	11171





DISEASE	Cases re- maining in hospital from previous year		Total admission		Total deaths.		Total cases treated.		Re- maining in hospital at end of year		Out- patients	
	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.	E.	A.
Total brought forward	-	113	167	2869	4	97	165	2873	2	109	1930	11171
XIV. AFFECTIONS PRODUCED BY EXTERNAL CAUSES: (Contd.)												
182. Drowning (addiden- tal)											1	
183. Wounds (by Fire- arms, war except- ed)				3				3				
184. Wounds (by cutting or stabbing in- struments)		3		140		2		138		5	14	233
185. Wounds (by Fall)		1	1	31			1	30	-	2	26	52
186. Wounds (in Mines or Quarries)				1				1				
187. Wounds (by Machine- ry)			3	18			3	18	-		14	13
188. Wounds (crushing, e.g., railway accidents, etc.)				11		1		11			5	10
189. Injuries inflicted by Animals, Bites, Kicks, etc.		1		43				40		4	8	18
190. Wounds inflicted on Active Service.												
191. Executions of civi- lians by bellige- rents												
192. (a) Over fatigue (b) Hunger or Thirst												
193. Exposure to Cold, Frøstbite, etc.												
194. Exposure to Heat - Heatstroke Sunstroke											1	
195. Lightning Stroke				1				1				6
196. Electric Shock											1	
197. Murder by Firearms												
198. Murder by cutting or stabbing in- struments												
199. Murder by other means												2
200. Infanticide (murder of an infant under one year												
Total carried forward	-	118	171	3117	4	100	169	3115	2	120	2000	11535



[illegible]





METEOROLOGICAL OBSERVATIONS.SWAZILAND 1949.Station - Mbabane (Highveld).Alt. 3,800 feet.

Month .	Mean Max.	Air Temperature °F		Actual Min.	Rainfall	
		Mean Min.	Actual Max.		Total	No. of days
January	79.55	60.13	91	51	6.17	18
February	74.40	57.08	81.9	50	12.59	21
March	72.03	55.39	80.5	49	4.48	14
April	79.55	60.13	91	51	6.17	18
May	68.80	46	81.1	35	1.59	5
June	62.47	41.43	76.9	32	2.02	6
July	65.48	39.39	77.8	31.0	0.06	1
August	69.39	44.71	85.5	34.5	0.79	4
September	74.87	50.63	92.0	40.3	3.91	8
October	73.77	53.61	88.9	44.1	4.12	20
November	72.83	56.27	86.0	48.4	6.77	22
December	77.23	58.90	87.0	53.0	8.40	19
YEAR	72.53	51.97	92.0	31.0	57.07	156
					Average 56.46	

Station - Bremersdorp (Middleveld).						
January	87.7	71.6	95	61.5	3.70	10
February	81.2	64.70	95.5	59.5	7.25	14
March	79.07	61.20	90	52.5	2.58	9
April	82	59.1	93.5	51	1.94	4
May	75.6	52.4	88	44	1.62	3
June	73.01	50.15	83.0	41.2	1.29	4
July	73.7	47.1	87.0	40.0	0.00	2
August	76.86	52.32	96.0	41.9	0.06	3
September	78.85	57.24	99.5	50.0	2.79	5
October	78.9	60.7	98.0	47.9	1.91	16
November	78.5	61.92	92.5	57.0	6.46	19
December	82.39	64.71	92.5	57.5	5.99	14
YEAR	78.98	58.6	99.5	40.0	35.59	103
					Average 33.78	



METEOROLOGICAL OBSERVATIONS.

SWAZILAND 1949.

Station - Hlatikulu (Highveld).

Alt. 3,890 feet.

Month	Mean Max.	Air Temperature °F		Actual Min.	Rainfall	
		Mean. Min.	Actual Max.		Total	No. of days
January	60	60	80	53	8.27	14
February	61	51	71	62	6.10	18
March	58.5	47	73	55	5.35	12
April	52	46	73	54	3.68	5
May	55	44	70	43	2.18	5
June	54	45	67	42	1.31	4
July	-x	-x	-x	-x	-x	-x
August	56	49	48	48	0.51	6
September	55	44	65	65	2.94	7
October	49	48	60	60	4.26	17
November	61.1	59.1	54.2	54.2	5.17	25
December	-x	-x	-x	-x	-x	-x
YEAR	56.2	49.3	80	42	39.77	113
(x - no record)				Average 45.85		

Station - Stegi (Lowveld).						
January	95.45	63.10	105	56	7.08	10
February	88.74	60.64	98	54	5.58	11
March	86.63	59.78	100	55	5.90	11
April	89.23	58.67	96	52	2.61	4
May	86.10	54.32	94	47	3.48	3
June	77.82	54.39	87	48	3.00	7
July	70.65	51.75	75.5	45.5	-	-
August	74.65	53.30	92.5	46.3	0.03	1
September	77.44	55.86	93.5	48.3	3.94	4
October	76.42	55.42	93.5	47.8	1.23	6
November	76.76	58.81	89.3	52.9	6.64	12
December	81.91	61.20	88.4	55.0	9.63	9
YEAR	81.80	57.27	105	45.5	49.12	78
				Average 29.61		







